



P D Hinduja Hospital & Medical Research Center

Mumbai

Introduction of Advanced Document Management System (DMS)



World Quality Month 2020 Celebration

Introduction of Advanced Document Management System (DMS)



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P. D. Hinduja Hospital at Mumbai, have a well established Medical Records Dept. with 45 employees.

We have a Document Management System(DMS) on a daily basis patients medical records are scanned, uploaded, Quality Checked. This is then made available for consultants view for their respective patient's consultation. The DMS assists with respect to continuity of care for patients.

This was introduced to all Consultants during the year 2015 but not accepted whole heartedly.

Their expectations included Mobile App and availability of records in reduced time.

Upgradation was an uphill task, no support from vendor and additional development was based on high charges. Hence we decided to move to new system for a better advanced technology - DMS Solutions.

This helped us achieving better customer satisfaction and financial gain.

PROBLEM DEFINITION

- Time taken in Scanned Medical Record uploading and viewing was high.
- Unavailability of Auto processing facility of scanned records and Diagnostic reports.
- DMS Application was not as user friendly.
- Availability of restricted access like viewing, printing and downloading facility for users was missing.
- Non availability of Mobile App facility.

PROBLEM DIAGNOSIS

Cause and Effect Matrix was used to evaluate and conclude the problem and process improvement, respectively.

Fish Bone Diagram also used for decision making.

Following are the root causes;

- High time spent on opening scanned medical records in DMS by Consultant's.
- Non availability of scanned medical records on time.
- Volume of OPD Records being high thus 25% QC was done.
- In spite of online facility, lab reports being printed, thus resources wasted.
- Increased reports filing work in MRD.
- Increased paper volume of Medical Record.
- Manual calculation and confirmation of quantum of scanned images for bill generation.
- Non availability of DMS in Mobile App.
- Non availability of DMS facility to other departments like Finance, Research, IT and HR.

PROBLEM REMEDY

- Identification & implementation of New DMS application
- Introduction of Visit based barcode on system generated forms of OPD & IPD– In addition to the existing document type barcode, recommended to introduce the visit based barcode – DOUBLE BARCODE. Thus eradicating step of manual QC.
- Auto uploads of investigation reports which are approved and electronically signed to the respective patient ID thus resulting in ceasing of printing physical copy of Investigation reports for medical records.
- High viewability performance - Scanned Medical Record viewing duration is reduced, resulting in Consultants are being satisfied.
- Availability of restricted user credential like viewing, printing and downloading for different users.
- User friendly screens for application users.
- Provision to generate the final bill for scanned images count on first of every month.
- Provision Mobile App facility to access DMS on Mobile.
- Provision to percolate the DMS facility to other departments like Finance, Research and Human Resource.

LOCKING THE IMPROVEMENT

QUALTECH PRIZE 2020
Healthcare

Advance document imaging system to provide better performance to delight our internal & external customers and for cost saving.

Consultants view their list of appointment patients and navigate records on the new DMS Mobile App.

Automation such that the availability of all categories of medical records on time.

CLONING THE IMPROVEMENT

The new DMS solution is also introduced in Finance Dept. to scan the financial documents and make the documents available in system.

Moreover this will be introduced in Research, Information Technology & Human Resources Dept. to maintain their documents.

TANGIBLE RESULTS

Savings on Annual maintenance cost is INR 1.2Lakhs

Saving of INR 2.4Lakhs per annum - by stopping print of investigation Reports.

Reduced three manpower – Annual saving of INR 5.4Lakhs

Total cost saving is INR 9Lakhs per annum.

INTANGIBLE RESULTS

User friendly, quicker and restricted access of medical records.

TAT for availability of scanned medical records in the application is within 72hrs from 120hrs.

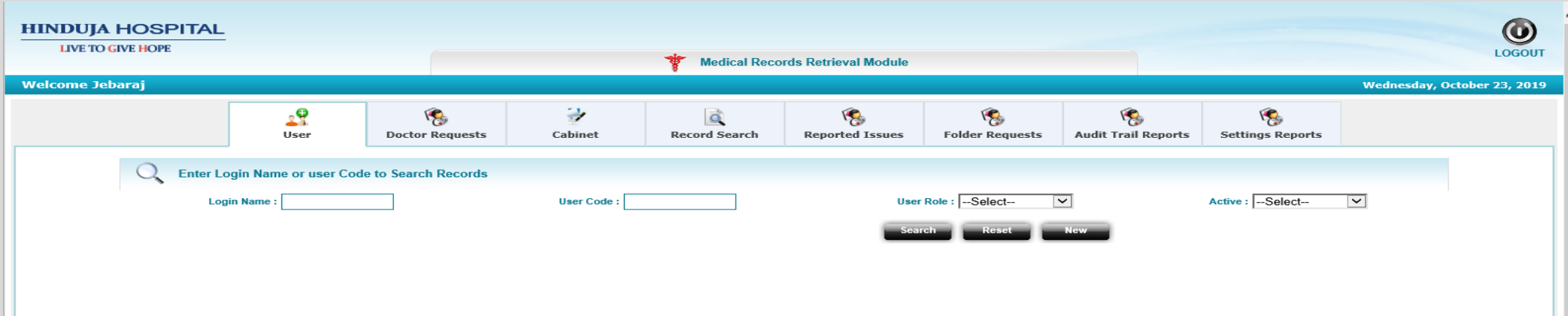
Viewability of Scanned Medical Record duration is reduced from 30-120 Secs to 1-10 Secs

File mapping error is reduced from 0.55% to 0.08%.

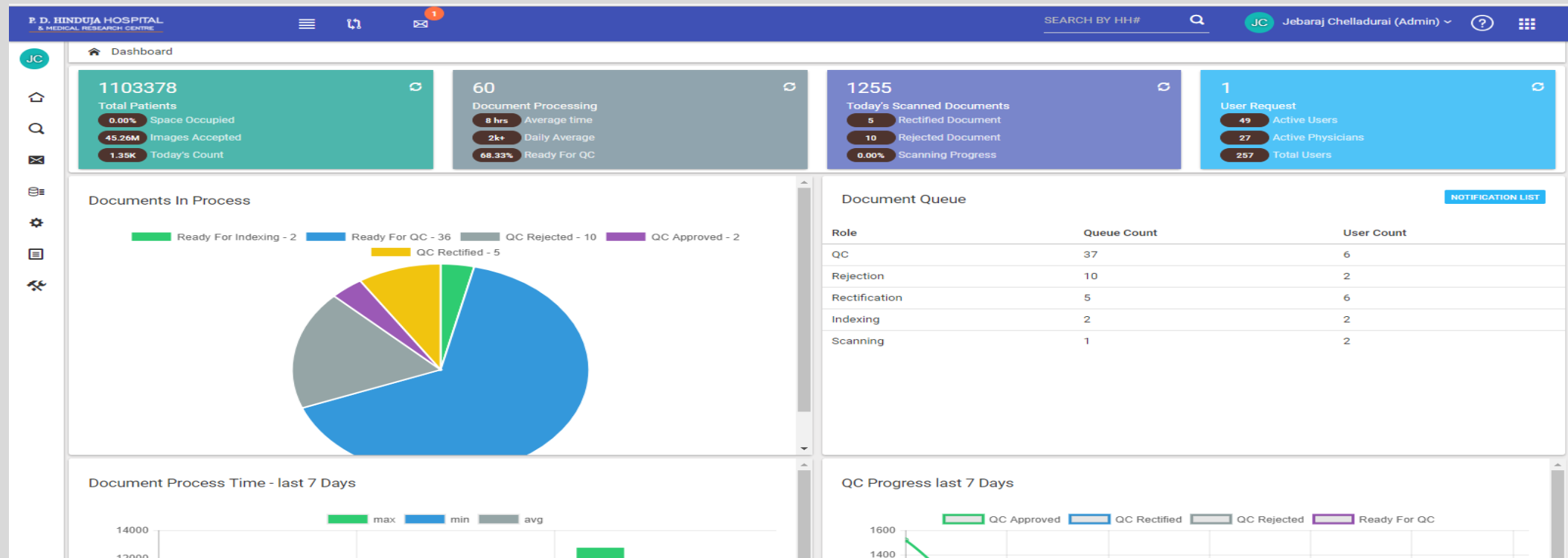
Introduced Mobile App without additional cost.

Bill generation for scanned images is reduced from 45days to 2days.

Admin Log in Screen



Before



After

All options and day-to-day data are available in one screen.

Consultants Log in Screen

HINDUJA HOSPITAL
LIVE TO GIVE HOPE

Medical Records Retrieval Module

Welcome Dr.NISHEETA S AGARWALA

Wednesday, October 23, 2019

Record Search | Appointments | Admissions | Personal

Appointments For The Day: 23/10/2019

Total Records Found: 1

Sr.No. HH/EX Number	Patient Name	Appointment Time	Appointment Status	Appointment Taken From
1	[REDACTED]	08:30	CONFIRMED	[REDACTED]

Click on appointment row to view records

Before

HINDUJA HOSPITAL
A MEDICAL SUPER SPECIALTY CENTRE

SEARCH BY HH#

Dashboard

My Patient | 18 Today's Appointments | 3 Admitted patients count | 0/0 Pending Approvals /Submitted Requests

My Appointments

Sr.No	HH#	Patient Name	Status	Gender	Age
1	1	[REDACTED]	Paid	F	66 yrs
2	1	[REDACTED]	Paid	F	63 yrs
3	3	[REDACTED]	Unpaid	M	N / A
4	[REDACTED]	[REDACTED]	Paid	F	71 yrs
5	[REDACTED]	[REDACTED]	Paid	F	54 yrs
6	[REDACTED]	[REDACTED]	Unpaid	F	74 yrs
7	[REDACTED]	[REDACTED]	Paid	F	77 yrs
8	1	[REDACTED]	Unpaid	M	57 yrs
9	1	[REDACTED]	Paid	M	50 yrs
10	6	[REDACTED]	Paid	F	43 yrs
11	1	[REDACTED]	Paid	M	58 yrs
12	1	[REDACTED]	Unpaid	M	67 yrs
13	1	[REDACTED]	Unpaid	M	73 yrs
14	1	[REDACTED]	Paid	F	47 yrs
15	3	[REDACTED]	Paid	F	79 yrs
16	1	[REDACTED]	Paid	M	59 yrs
17	11	[REDACTED]	Paid	M	63 yrs
18	[REDACTED]	[REDACTED]	Unpaid	M	N / A

Admitted Patients

- P M(59 yrs) HH#:[1: 4 E 33]
- P M(45 yrs) HH#:[1: 2 E 70]
- R M(46 yrs) HH#:[1: 4 S 12]

After

Record Search, Appointment & Admission List are available in one screen

Nursing Log in Screen

P. D. HINDUJA HOSPITAL & MEDICAL RESEARCH CENTRE

SEARCH BY HH#

SV [User Name] (Nurse)

Dashboard

My Patient

0 Today's Appointments

26 Admitted patients count

0/0 Pending Approvals /Submitted Requests

My Appointments

Search Patient

ALL LIST

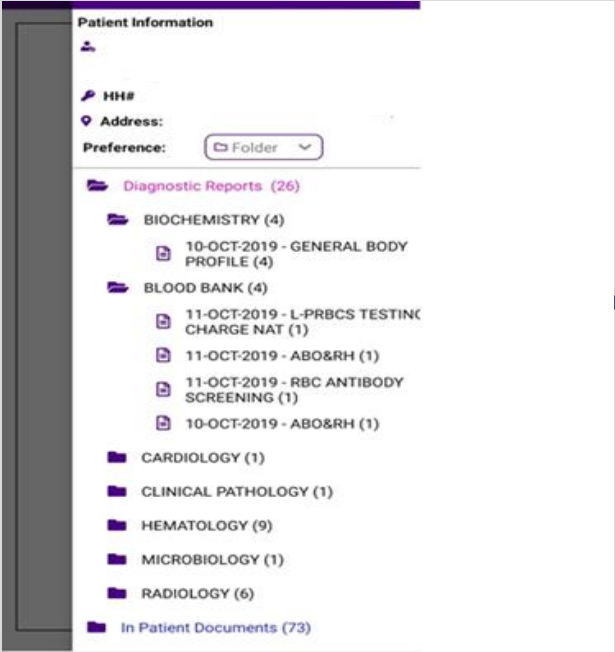
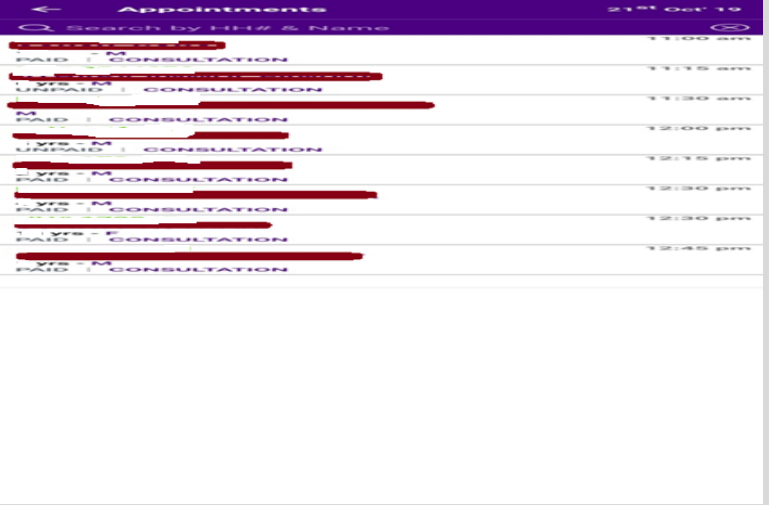
Sr.No	HH#	Patient Name	Status	Gender	Age
• NO DATA FOUND FOR APPOINTMENTS					

Admitted Patients

Search Patient

S	[Redacted]	HH#:[1700000]
	M(65 yrs)	16 N 28
R	[Redacted]	HH#:[1700000]
	M(56 yrs)	16 N 25
V	[Redacted]	HH#:[1700000]
	M(64 yrs)	16 W 19
S	[Redacted]	HH#:[1700000]
	F(19 yrs)	16 S 1
M	[Redacted]	HH#:[1700000]
	F(73 yrs)	16 W 16
R	[Redacted]	HH#:[1700000]
	M(72 yrs)	16 N 26
H	[Redacted]	HH#:[1700000]
	M(61 yrs)	16 E 39
M	[Redacted]	HH#:[1700000]
	M(81 yrs)	16 S 4
S	[Redacted]	HH#:[1700000]
	F(44 yrs)	16 N 32
R	[Redacted]	HH#:[1700000]
	M(61 yrs)	16 E 38
A	[Redacted]	HH#:[1700000]
	M(73 yrs)	16 N 28

Mobile App Screens



By clicking Radiology PACS link

